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Title

The Effects of Elevated Fibroblast Growth Factor 23 on Mandibular Growth in Rats

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Highlights

- Investigating the role of FGF23 overexpression locally on mandibular condyle growth
- Using adenovirus as a vector can overexpress medicine efficiently and effectively
- Administering FGF23 overexpression to downregulate Col X and Sox 9
- Injecting FGF23 locally to suppresses the formation of condylar cartilage

Abstract**Objective**

The aim of this study is to elucidate the local effects of fibroblast growth factor 23 (FGF23) in on mandibular condylar growth in growing rats.

Design

Growing Sprague–Dawley rats received intra-temporomandibular joint injections of phosphate buffer solution (PBS), adenovirus-mediated green fluorescent protein (Ad-GFP) or adenovirus-mediated fibroblast growth factor 23 (Ad-FGF23), which were marked as groups A, B, and C, respectively. In vitro, we treated rat mandibular cartilage chondrocytes with PBS, Ad-GFP, and Ad-FGF23.

Results

The mandibular condyles in group C grew smaller sizes than those in the other control groups due to significant differences among the experimental and control groups with

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